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## *ART AS AN OCCUPATION FOR WOMEN.*

I N speaking about the suitability of art study as a training for women, and its practical value as fitting them for the serious duties of life, by which in any event they make themselves independent members of society, I am conscious that I touch on a subject upon which there is much difference of opinion at least, and latterly much controversy. In view of this, and only recognizing the difference of muscular strength in the sexes, existing for obvious reasons, and which according to every natural law must be compensated for by some special endowment not possessed by the muscularly strong, (or Nature has been less just to her last creation than to all others), I judge from my own experience that the whole subject is one of great interest, and that the compensation referred to takes the form physically of a more delicate organization, and mentally of a greater sensitiveness to outward influences. Theories seem to me to be fairly deducible from practice, by those who may have no claim to be philosophers, or who do not possess the original faculty of inductive reasoning; always supposing that those who practise have sufficiently long and extensive practice, and seek rather to discover a principle for their own guidance than to establish a theory preconceived or borrowed from others. My own fear has been,

and now is, that hitherto women have been treated as pets and playthings, to be indulged and delighted in, but not to be held responsible for any thing; have been educated with the view that all should become merely the ornaments of society and not its essentials, and the important half of its structure; that, finally, men have come to regard women with a patronizing feeling, in which there is an infinite amount of good nature in some cases, but no justice in any case. And the terrible thing is, that, when the good nature ceases, or the indulgence necessary to a plaything comes to an end, all the penalties fall on one side only: the whole of the sauce is used up for the goose, whilst the gander stalks away to new fields that are ever verdant and fresh, and indulges his gandorial magnificence.

Christianity and May meetings ought to have had long enough opportunities in nearly nineteen hundred years to test the fairness and justice of this view of human nature; but they seem to me to have failed to discover, that, whatever difference our beneficent Creator meant to exist in his design of human beings, he usually places there with his own Almighty hand, and requires no further journeyman's work on man's part to emphasize or stamp this difference. Yet, in spite of this, we educate women superficially, and then smugly say they have no minds; we withhold all reasoning processes from them, and then say they cannot argue, but jump at conclusions; we train and grind up our boys in athletic sports, in Euclid and conic sections, and the differential calculus, and our girls in Berlin-wool work, in waltz-playing, and the Parish fashions, and then proclaim that men can reason, women only perceive, men can create, women only appreciate; and as Milton the puritan poet expresses it,—

“For contemplation he, and valor formed;\*

For softness she, and sweet attractive grace,”—

as though contemplation were not equally characteristic of both sexes, the combination of leisure, a stored mind, and subject to contemplate; valor, the result of self-confidence in training, and difficulties already overcome, and faith in

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\* Not trained.

surmounting future difficulties ; softness and sweet attractive grace, the natural appreciation of each sex by the other, as much belonging to men as to women, common to the two sexes, which are alternately the attracted and the attractive.

My own belief is, that we have no grounds for and no right in making any difference whatsoever in human beings on account of sex, either in their education or occupations, more than Nature has done ; and that half of the troubles we find in the world arise from, and are a just judgment upon, our presumption in making any distinction between them, in fostering the self-conceit of the one, and sacrificing the independence of the other. Let the same education from the first to the last, physical and mental, be furnished for both sexes ; let it be accepted, that, as they require the same physical sustenance, so they will need the same intellectual food ; that the two who will in time become one flesh shall be in unison and harmony with each other, in attainments and desires, in their minds as well as their bodies, and then we shall have the perfect harmony in difference, which we see in all God's works, leaving it humbly to him that all His plans shall develop themselves with as much certainty as that He creates each after its kind, without any impertinent help from us. The compensation which it appears to me Nature makes to women for the comparative withholding of muscular strength, is endowing them with greater powers of endurance in the first place, and a gift of natural aptitude and quickness, which, when it exists in men, we call mother-wit. Thus we see that whilst men become irritated and impatient of the repetition of little troubles, and would put a violent end to them, women, like charity, are long-suffering and kind over vexations, which in connection with their children and other cares often last daily for years. The quickness and aptitude they have may be the support which Nature gives them through their instincts, as a balance to men's muscular superiority ; and this seems to me to indicate that the sensitive touch and quick perception and delicate hand point out the practice of art as peculiarly adapted for a woman's occupation, being in itself the most refined and delicate of all manual labor, as it is also

the most perfect expression of the impressions we receive, through our eyes, of physical phenomena.

It may be, that, should we recognize this view, the fair division of labor, which somehow or other must be made, will be facilitated, and both sexes profit by it. If we remove all masculine protective tariffs, we may find great powers where we have fancied that weakness was inevitable. In literature, we have some of the most powerful works of the imagination written by women; and they fetch the same price in the book market as the novels which men have written. In the picture exhibition, the buyer discusses a work of art in relation to its price, not with reference to the sex of the painter; and those who are familiar with the London exhibitions know that as large a proportion of the works displayed in the exhibition of the Society of Female Artists are sold as in any other exhibition composed principally of the works of men. That, however, is the case with books and pictures only, where women sell their labor at their own time, and choose the purchasers, being proprietors of their own skill. In every other avocation that I know, the same work, performed in the same manner and with equal skill, is paid for at an entirely different rate to the two sexes. This is especially the case in education, whose influence on the happiness and safety of the human race cannot be overrated, that, of those who are employed to train up our children in the paths of rectitude and strict morality, nine-tenths of them are paid for their labor at about half the price they would receive if they were men,—an unfortunate example to them of how they should teach rectitude and instil moral principles.

If a woman and a man were by their industry to raise two barrels of potatoes, and each took a barrel to the market, the market price of a barrel of potatoes would be given to both for their goods. If a woman and a man by their industry and training grow the ability to teach, and take their goods to sell in the educational market, both being of the same quality, tried by every test, the man will be paid by the purchaser nearly fifty per cent more than the woman; and the latter is of necessity obliged to take the unrighteous offer. That is to say, when we are buying 'good for our



bodies, or to fatten our hogs, we do fairly to all who have to sell; when we purchase intellectual sustenance, to educate and develop our children, we pay those who have education to sell, if they are women, at fifty per cent less price than we should pay them if we were buying potatoes of them for our swine.

The minds and souls of our children seem to me to be of as much importance as their bodies, and even as the bodies of any other animals; but here, in comparison, by an act of injustice, we undervalue them about fifty per cent. If women supply us with only half as good an article as men, we do an injustice to our children by employing them; if the article supplied by women is as good as that supplied by men, we rob them of every dollar we should pay men for it, but don't pay to women.

So that, in the educational labor market generally, we act inconsistently, and inflict penalties upon those from whom we require the most exalted service. This cannot be for the public good, but proceeds from the limitation of occupations suitable to women, resulting from their utterly impractical education, which throws almost all women of the middle class who are without means into the educational market. By this, individual labor is reduced in value, the market being glutted. The purchaser, therefore, goes in and buys up what he wants at half-price, the needy seller sacrificing it, on the principle that half a loaf is better than no bread. This is the explanation of a condition of things, which is, from the public point of view, utterly suicidal economically, and the root of many evils morally. We have drifted helplessly, but, I trust, not yet hopelessly, into social circumstances, by which the intellectual powers of half of the human kind are left dormant, and remain stunted and undeveloped; so much so, that but a very limited number of occupations are possible to women, and of these, from our worship of a fetich called Mrs. Grundy, many are deemed unsuitable. Yet Nature goes on laughing at the little golden calf that we have set up, and bringing into the world more women than men, whose minds and actions we deliberately cramp more than John Chinaman does the foot of his female minister, who is so much his mere chattel as to be

drowned by him, or sold to his neighbor, to suit his own convenience, without interference by the law. \* \* \* \*

I am aware that for this deplorable condition of things no one is directly to blame, and that men are sometimes very hardly judged by women as being wholly responsible for it. We have drifted into it, having set too much store by that Eastern estimate of women we originally received from the Jews, and might as well have adhered to burnt-offerings, peace-offerings, and sacrifices, as to still keep up the senseless distinctions of sex which came to us from the land of harems and fatalism. It is time to wake up from our delusion on this matter,—time for men to reject with the scorn and contempt it deserves the masculine and feminine chirruping of those who accuse women-helpers of a desire to unsex them, as though that were possible. Here we see women of ability and power running off into all kinds of lamentable delusions, and inventing pestilent doctrines concerning their relationship to men, all for the want of sound practical education, good, healthy work, and fair treatment; and yet we fold our hands, and stand idly by, horrified at the phantom our neglect has called up, instead of remedying it by the only possible specific,—work and wages, and plenty of both. We ought to clear away the fanatical cobwebs in women's brains,—engendered by superficial education, by their sense of unjust treatment, and partly by enforced idleness,—with a vigorous blast of wholesome labor in any capacity or occupation they choose themselves, or can do the best at: and let us once for all try and learn the truth, that sin and labor are of no sex, and that any professional or manual occupation a decent woman could not worthily be employed in, a decent man has no right to engage upon; whilst every employment that is necessary and honorable is as much so to one sex as to the other, the fitness of each for any occupation being controlled only by their physical powers. This, I maintain, is not a sentimental view. It is, for aught I know, the view of many besides myself; though having never had time to read either book or pamphlet on the woman's-rights question, I may be advancing very old arguments: but this does not affect the rightness or wrongness of my own judgment, inasmuch as these conclusions have been arrived at independently, by

practical observation extending over many years, during which time I have been a daily educator of adult women, and thus know something of their wants and their powers. Experiments for educating women and men together are familiar to me; and so also is the strict separation of the sexes educationally. The former, in every case coming within my observation, has been beneficial to both; and the latter as detrimental. For this reason I would as strongly oppose colleges and universities for women only as for men only, each being but half the story; and the next great act of justice and wisdom which the just and wise should be called upon to perform is opening all the universities and schools and colleges to women, in which they may acquire the educational basis of all the professions. The dangers which sage people with telescopic minds decry in the distance, when "sweet girl graduates" are placed in daily association with their graduating brethren, is a danger which is existing in their own households, at their neighbors' hearthstones, in their own churches, and in all social assemblies every day, without destroying them. If it be true that young men and women cannot meet on the same staircase, listen to the same lectures, and study the same subjects together, without disrespectful treatment of one another, and without influencing each other badly, it is something exactly contrary to my experience for twenty years: but, if it is really the case, the sooner they are taught to do so by actual experience, the better for every one concerned. It is a scandal and disgrace to the nineteenth century, if it be so.

I have dwelt more fully upon this topic than I should have felt warranted in doing, but for the fact that art study especially (in which knowledge of the human form is an essential to success in the highest branches) is one of the subjects which Mrs. Grundy has her opinions about, and darkly hints at the shocking things which sometimes happen, when women take to studying art, anatomy, and other fearful subjects, that ladies of delicate perceptions should never think about. That kind of grundyism must be wiped out; and I know no better way of doing it than by proving or making all such studies so pure and morally harmless that the purest-minded woman can study them without any

shock to her most delicate perceptions, and with much profit to her knowledge, and carry on her studies side by side with her masculine fellow-students. If there be any apples on the tree of knowledge which Eve must neither touch nor taste, I think, on the whole, Adam will be better without them; and history, if it sets a precedent at all, records at least one instance where the same fruit was forbidden to both,—not to one only.

It is some comfort to know that many of the preserves of knowledge have been successfully besieged by women, and that colleges of surgeons and physicians, and academies of arts, whether royal or republican, are surrendering unconditionally to the demands of lady students for admission and degrees. In this crusade, men have taken the sorry part of obstructives, helped and encouraged thereto by the cackling of some women who profess in such matters to be anxious only for the happiness of their own sex, but who, if they had ever faced the difficulties of providing for themselves, might very quickly find good grounds for changing their opinions. Remembering, too, the indescribable amount of influence which women have upon their children, I cannot imagine it possible to over-educate them; for every word and thought they utter is unconsciously shaping the minds and lives of their children, whilst yet of tender age; and when we consider how almost invariable it has been, that the great men of all ages have owed their first inspirations and their habits of thought to their mothers, whose superiority to other women has been that of a higher education, it would appear to be established, that, whatever it may be necessary to teach to men in this world, it is a matter of necessity to teach to women, in order that the man's education may begin with his life, and his mind be nurtured with his body, that perfect human education may be accomplished.—*Walter Smith, in Art Education.*

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IN SCOTLAND, one young man to every thousand of the population goes to college; in Germany, one to every 2600; in England, one to every 5800.

*BUSINESS COLLEGES IN AMERICA.*

THE question of practical education is receiving at present a great share of the attention of the best minds of this country and Europe; and not only are our highest seats of learning finding it necessary to give elective courses of study, and especially to add to their departments of practical science, but independent technical schools are being established at home and abroad, and are meeting with the greatest success. In France, especially since the war, great attention is being given to the establishment of commercial schools; a number of such have been endowed by men of means, and by the government; and agents have been sent to this country to look at this feature of our educational system, and profit by what is seen.

A recent number of the *Revue des deux Mondes* contained an elaborate article on "Commercial Schools in France and Elsewhere," which was very full and exhaustive, but which failed to present the best features of American schools. The November number contains in response a letter from Prof. G. H. Gaulier, principal of the Department of Foreign Languages in Packard's Business College of this city, which we have had translated and publish herewith.

The Business Colleges of America have constituted an important feature in the educational system for the last thirty years, during which time they have constantly increased in number and importance. Classical education is somewhat at a discount here, for the reason that the brightest examples of success in acquiring wealth and position are of men not (according to the general sense of that term) liberally educated. Young men, ambitious to make a mark in the world, look around them and see that College graduates are not the men who are impressing themselves upon the world, and at once conclude that a collegiate education is not the necessary preparation for what they desire to achieve in life; and in order to meet the demands for some kind of preliminary training, Business Colleges, by claiming to give a practical direction to their teaching, and to satisfy the not unnatural desire of young

men to be considered as having received an education, in a great measure supply the place which would otherwise be filled by the College of higher classical culture; and, as these institutions have grown in importance and recognition, it has been found necessary, year by year, to cover a broader area of study, and through fidelity to the hopes which they excite, to furnish, in a generous sense, the means of a thorough practical education.

The Association of Business Colleges originating with Messrs. Bryant and Stratton, and reorganized under the title of "The International Business College Association," comprises the most extended and complete effort of this kind in the world. The association includes not less than forty separate and distinct institutions in the United States and Canada, having a representative in all the largest commercial cities on the continent, extending from Portland to San Francisco and from New Orleans to Montreal. This a co-working association in an important sense; although each school thereof is entirely independent as to its own management, and not one of them is dependent for its support upon anything but its real patronage. Some of the institutions in the association are, to be sure, working under State charters, but these charters are very loosely drawn, and leave the management, with very little supervision, in the hands of the real owners and proprietors.

The studies pursued in these Colleges are, first, Book-keeping in all its ramifications and applications, Commercial Law, as covering every phase of personal rights and business customs, Commercial Arithmetic, Commercial Correspondence, Political Economy, Civil Government, and, in several of the schools, the Modern Languages, particularly French, German and Spanish. In the New York College, the study of French is a very important feature, and arrangements are now being effected to extend the correspondence of this institution to England, Germany and France, with a view to mutual benefit, such as is derived from the intercommunication now established, as between the different Colleges of the association in this country.

The extent to which this correspondence is carried on may be appreciated from the fact that not less than one



nundred letters a day are received by the New York College from the nearer institutions, namely, Boston, Albany, Troy, Philadelphia, Trenton and Baltimore. These letters contain shipments of goods—representative merchandise in the shape of cards, with the kind and quantity of goods printed thereon—to be sold on account of the shipper and the consignee, or to fill orders of purchase from the person to whom shipped; also, account sales of consignments which have been sent and sold, with the returns in the way of drafts, checks or current money; and, in fact, embracing all the details, in every direction, characteristic of business correspondence and business transactions between leading houses in the large cities. This affords a most excellent opportunity for criticising the work of the student, and has the advantage of promoting wholesome competition between the students of the separate institutions, and in every way serves to quicken and liberalize the mind and to prepare the aspirant for that wider field of usefulness which awaits him.

There is no better way of giving an idea of the character and extent of the studies pursued in these colleges than by presenting, as briefly as possible, the daily operations of one in New York. The sessions are held five days of the week, commencing at nine in the morning and closing at two in the afternoon. The students—about three hundred of whom are in daily attendance—are expected to be prompt and regular, and are held strictly to an account for absences and violations of the regulations of the school. The first hour of the morning is devoted to lessons in writing, with the exception of about fifteen minutes given to the opening exercises, which consist of calling the roll, giving out the appointments of the day, brief lectures or hints from the professors, and sometimes readings and recitations by the students. Great stress is put upon writing—and, under the American system, with the careful instruction of intelligent teachers, it is astonishing to what perfection this art is brought. There is a severely practical character to the writing practiced in this College, which will compare favorably with the established styles of the best business houses anywhere. The institution has a constant and



increasing demand from merchants and others for clerks and accountants, owing principally to the fact that nowhere else can one be so sure of finding well-trained business writers.

In the College proper there are two departments, one the initiatory or theoretical, the other the advanced or practical. In the first department the theory of accounts is thoroughly taught, in a series of exercises adapted to that end, and presenting every phase and bearing of business affairs—of gains and losses, of adjustments between partners, and all the intricate questions and applications which are so apt to trouble the brain of a neophyte. In connection with the study of accounts in this department, the other branches, viz., Arithmetic, Commercial Law, Modern Languages, etc., are carried on *pari passu*. From three to six months are spent in these preliminary studies, when the student is advanced to the practical department. This department is simply a miniature business world. Very little teaching is done here. The student is supposed to have received his theoretical education, and to have entered upon business life, where his theories are to be put in practice. Should he fail in this application, it is an evidence that his theoretical training has been imperfect, and he is sometimes sent back to school to complete his education.

In the practical department he begins as a small merchant, is furnished with capital sufficient for his business, and is instructed generally how to proceed. The details of all his transactions he is expected to carry out himself. A thorough working bank is in operation, and he must negotiate his loans, make his collections, and keep his deposits therein. He conducts his business to its conclusion, declares gains or losses, closes up his books and holds his capital for some other department of trade. He thus goes on from one sort of trade to another, until he has covered the leading business enterprises of the country; he is then advanced to a position in a large jobbing or importing house, where he is made familiar with all the routine of purchasing from manufacturers, of receiving from foreign countries, of passing merchandise through the Custom House, and all the details requisite in real business.

He fills here all positions from the lowest to the highest, or manager's position. He is then advanced to the merchandise emporium or general agency, which holds the key to the entire workings of the business community, and gives a practical illustration of the laws of supply and demand. He has here an opportunity to study practically the questions of political economy through its working channels of operation. Here are illustrated all the phases of production, barter and consumption, and the laws which they set in motion. He passes regularly through the transportation office, where he gets a practical idea of the routes of travel, the rates of transportation, and the minute details and manipulations required; through the various kinds of commission and shipping houses and post-office; through the bank where all his previous knowledge is tested by the severest financial calculations and applications. He commences as runner, is advanced by regular gradations to the positions of collection clerk, bill clerk, discount clerk, receiving teller, paying teller, individual book-keeper, general book-keeper and cashier. The transactions in the bank are as complete and perfect as those in any actual working institution, as it is the financial agent of the entire business community—receiving deposits, paying out on checks, discounting paper, collecting paper, and regulating all financial matters, as between the students of the College where located and those of corresponding institutions. As the final test of his proficiency, he is put in charge of all the offices as general superintendent, and is made responsible for the entire workings of the community.

While in the practical department, which occupies from six to nine months, and often a year, the student is in constant correspondence with the students in co-working institutions of the other cities, as before intimated. The practical department bears the aspect of an industrious, thriving, ambitious business community; each student is, to all intents and purposes, a business man, and regards himself thus; he forgets that he is a mere pupil, but assumes and feels the dignity of his position, as one who is managing his own affairs. His attitude and conversation are business like—he has no thought of his transactions as being other

than real; and, for all purposes of training, the system is as thorough and severe as could be adopted in connection with real life.

As before remarked, the tendency of these institutions is toward a wider and more liberal culture, and as they are being more and more recognized and accepted as professional institutions, out of which young men pass into the actual duties of life, they are more and more encouraged to meet the just demand—and Business Colleges to-day are as far in advance of what they were ten years ago as it is easy to conceive.

The article in the *Revue des deux Mondes* on Commercial Schools in France and Elsewhere, has been highly appreciated here, both on account of the information it has given as to commercial schools in Europe, and for its broad and liberal views of what may be and will be done in the way of improvement. It has already been translated, and will assuredly do much good, as it is having a wide circulation.

GEO. H. GAULIER.

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## THE STRUCTURE OF THE APPALACHIAN ZONE.

### PART SECOND.

THE Alleghany division extends properly from the axis of the Alleghany Mt. westward not less than two hundred miles, therefore including a considerable portion of the Ohio Valley, though probably the most disturbed portion is barely forty miles wide, the rest being to all intents and purposes a plain. The elevation along the main axis varies little. In Western Pennsylvania it is about twenty-seven hundred feet, in West Virginia it is twenty-six hundred and twenty at the crossing of the Baltimore and Ohio Railroad, two thousand near White Sulphur Springs, and twenty-six hundred and fifty feet at Peter's Mountain, while in Tennessee it rarely exceeds two thousand feet above sea-level. At the gap of Cheat River in Laurel Hill, the elevation of the hills is little less than two thousand feet. From Laurel Hill northwestwardly the descent is well-marked,

so that when we reach the Ohio river at Wheeling, we find the river hills reaching twelve hundred and eighty feet above tide-water. This is not the original height, as we ascertain farther west, where we find the hills rising to fifteen hundred feet. In these measurements, we take the hill-tops and not the river levels. Should we take the latter, we would be led into serious errors, as the rivers are local, flowing in deeply excavated channels, several hundred feet lower than the surrounding country. Thus at Wheeling the land lies really almost seven hundred feet above the river, and even the narrow "bottoms," as they are termed, the river terraces, are fifty feet above low water.

This great plateau, the northwestern side of the Alleghany Mountains, does not strike the observer as in any way resembling a plain. It certainly is very far from being level, and the scenery is so complicated by hill and dale that one is at a loss to describe it. Yet should one stand on the summit of any of the sharper hills in eastern Ohio, he cannot fail to notice that the summits of all such hills are in almost the same plane, and that those which fall below this plane have their tops rounded, as though they had been worn off. Even a superficial observer must inevitably conclude that at some time these hills were connected, that where valleys now exist was once filled up level with the hill-tops, and that some agent of wonderful power has removed the material which no longer appears. Such a conclusion is undoubtedly true. The hills bordering the Ohio are not true mountains, they are simply relics of a great plateau, which has been gashed by running water, by which the valleys have been formed, and an enormous amount of material has been carried away to form the alluvial plains, which border on the Ohio and Mississippi. Of the wondrous erosive power of water we shall speak more fully beyond.

On the map we see that the ranges composing the Appalachian chain are not straight, but that they stretch along in an apparently rude and lawless manner. A little examination, however, suffices to show us that this lawlessness is only apparent. There is a regularity in these irregularities, for they are common to all the ridges. Thus from Canada

to New York the trend of the whole chain is N.  $15^{\circ}$  E. and S.  $15^{\circ}$  W.: but from the Hudson River gap at the Highlands to the Lehigh River in Pennsylvania the course is no longer straight, for the whole chain sweeps round westwardly, giving a graceful curve, with its convexity directed southeastwardly. From the Lehigh River to Cumberland County, Pennsylvania, the course is straight, towards the west, but in the Juniata region, reaching to the northern border of Maryland, the chain is again curved, and deviates from its previous course  $40^{\circ}$  towards the east, giving a curve with its concavity directed southeastwardly. From that point to Randolph County, West Virginia, the trend is straight and southerly, but thence to the New River it is curved, the course being deflected to the west. In this section the mountains become very irregular, and the topography presents, on a large scale, the appearance of a short chopping sea. The width of the whole chain here is barely sixty miles. From New River to the mouth of Holston River in Tennessee, a distance of two hundred miles, the axes are straight, and have the direction N.  $67^{\circ}$  E. and S.  $67^{\circ}$  W. The width here is only fifty-five miles. From the mouth of Holston the chain curves eastwardly, suffering a deflection of  $32^{\circ}$  from its previous course until it approaches the mouth of Clinch River, where the course is once more changed, becoming straight. This direction is retained until at a short distance southwest from Tuscaloosa, in Alabama, the whole chain, which by this time has become exceedingly low and narrow, finally flattens out and disappears under the comparatively recent formations of middle Alabama.

In this examination of the physical structure of the Appalachians, we have found in going from east to west, these distinct mountain belts, the Blue Ridge, the Middle Mountain Belt, and the Alleghany plateau, separated by valleys of greater or less extent, while in following the series longitudinally we have found it divisible into nine sections, having alternately a curved and a straight course.

Looking at a mountain from a distance, one not careful in observing might conceive of it as simply an irregularity of the surface, an indiscriminate heaping up of material. But

not so. Mountains are not mere excrescences; they are not foreign, like a lump of clay or putty attached to an artificial globe. Their intimate structure shows that they were once but like the flattest plain, and that their present form is the result of mighty forces, upheaving the earth's crust. The land as seen by us to-day is believed by geologists to have accumulated gradually. Not indeed as some would have us say by gradual accretion from without, but only that the now existing land has previously existed at other localities on our globe. It has been transported by running water, or, dissolved in the sea, it has been precipitated through the agency of animal life, such as corals or mollusks, and thus placed in new positions. These operations go on now. The Ganges, Amazon and Mississippi on a great scale, as well as all smaller streams on a lesser scale, carry mud and other materials suspended, which from time to time they deposit, forming along their banks the fertile lands termed "bottoms," or transporting them to the sea where they aid in forming deltas and thus in adding to the land in such localities. Whenever additional land is formed in one place it is quite certain that land has been worn away somewhere else. Thus the Mississippi River is continually increasing its delta by depositing the material suspended in its water. But all this material has been carried from localities bordering on it or its tributaries. During a heavy rain-storm the soil is washed from the hill-side into the little streams, which thereby become muddy. In this condition the little streams reach the rivers, pouring into them this water turbid with soil. These in their turn, swollen by the influx of water, push on with speed greater than usual, carry the load of detritus until the current is checked by some means and then drop a portion of the load. The finer particles are carried to a much greater distance than those which are coarser. Thus it is that particles washed off the hills of northern Pennsylvania or from the upper waters of the Missouri, nearly three thousand miles above St. Louis, will eventually find their way to the Gulf of Mexico. Some matter is soluble in water. Thus common limestone, though but slightly soluble, may in course of time yield a vast quantity to the sea. This dissolved limestone in its turn affords



material out of which the corals construct their framework and the mollusks, or ordinary shell-fish, their shells. New supplies are brought from the land as rapidly as these animals abstract it from the sea-water.

Now such being the case, what condition would we find seaward from the shore where some mighty river like the Mississippi discharges with it enormous quantity of muddy water? In obedience to the law of gravity and the resisting force of the water, the gravel and coarser materials would be dropped first, then finer material, and last of all the finest particles or those which are impalpable. We would expect then to find the deposit near the shore comparatively coarse, made up principally of gravel and rolled pebbles; following this seaward we would find it gradually diminishing in coarseness as well as in thickness, until at length as the deposit thins out almost to nothing we find it consisting nearly entirely of the finest silt. Before reaching this line we find a new element appearing in the deposit, which soon occupies the horizon alone. This consists mainly of microscopic animals and their exuviae, mingled with the shells of mollusca, the results of organic life. Following the deposit beyond the influence of the turbid water we find it consisting entirely of these remains—a true limestone. If the sea be shallow and the climate favorable, we shall find the corals at work in this clear water and industriously contributing to the formation of limestone.

Now let the condition change. Let us have a subsidence of the sea-bottom, no unusual occurrence. The mouth of the river retreats inland, the turbid water reaches not so far as previously and the limestone formation is carried nearer the former coast-line. It passes over the silt previously deposited, and if the subsidence have been sufficient, it may even cover the sandstone of the old shore. Had the sea-bottom been elevated, the land deposit would have stretched farther into the former sea and have covered the limestone. In either case there would be no difficulty in distinguishing between the layers of limestone and muddy material. The difference would be well marked. If these depressions and elevations should alternate, there would be numerous layers, and in the nature of the case these layers



or strata would be horizontal. This is no purely hypothetical case. We know that such subsidences are continually going on. We can even measure the rate at which New Jersey is disappearing, and can tell approximately how few hundreds of thousands of years will elapse before that State will be blotted out of the Book of Nations. We see these strata forming to-day at the mouths of our great rivers, and in their formation we see what has been going on in the past history of our globe. Knowing, as we do, that such strata or layers are deposited in a horizontal position, and that in the nature of the case they can be deposited in no other way, we are compelled to believe, if we find them bent or twisted or turned upon edge, that they have been displaced, that some force has been exerted to change this normal position after they were deposited.

The numerous gorges occurring in mountain ranges afford full opportunity for investigation of their internal structure. For an illustration of the structure of the Appalachian chain let us take the route of the Chesapeake and Ohio Railroad which crosses the whole chain in a line, affording perhaps the best exposure of the ridge as one series. The cuttings are deep and the hillsides are very steep and often bare. These cuttings and naked hillsides show us that the mountain is made up of layers as easily distinguishable as the individual books in a pile or as the rows of bricks in a wall. Here we have a vast bed of sandstone, made up of almost innumerable thin layers, upon this rests a slate stratum; still going west we find over the slates, clay beds, filled with shells, over these coarse sandstones with occasional leaves of ferns; still further west an enormous deposit of limestone more than one thousand feet thick, made up of many layers, differing in color and composition, some of them simply masses of shells packed together. Upon this limestone we find a strange alternation of sandstone, coal and limestone in layers varying from two feet to two hundred feet in thickness, and having a total depth of not less than three thousand five hundred feet. In every way save one, these strata resemble those forming now along our shore and under the sea. Save one, because they are not horizontal; they are all tilted or inclined to either the south-

east or north-west. In some localities they are set up on edge and in others they have been pushed over, their natural order is inverted, so that those strata which were originally on top are now underneath those formerly at the bottom. Here certainly is hopeless confusion. The tourist riding hastily along and glancing only now and then from the car-window is astonished at the conditions, and inevitably concludes that any attempt to discover order here would be worse than useless; he might consider it almost foolish. Yet not so. Nothing can be grander than the history revealed to us by a careful study of these phenomena. But let us see what the phenomena are. Watch attentively from your car-window and so study some one layer that you can identify it without difficulty at another locality. A few seconds will suffice for this. We will suppose that our examination begins in the Middle Mountain belt. When you first see your stratum it is inclined or, as geologists would say, it dips to the south-east. A few moments afterwards you find it dipping to the north-west or perhaps vertical. This alternation is repeated several times, and you at length conceive that there is a connection between these strata, in other words that the stratum is curved. Perhaps while you are thus considering, the train passes in full sight of some enormous rock-face completely denuded of soil, which shows a beautiful arching of the rocks and so confirms your supposition. But these curves vary much in character in the different mountain belts.

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DURING the year 1872 gifts have been made by individuals for educational purposes, in the United States, as follows: for colleges and universities, \$6,282,461.63; for theological institutions, \$1,155,856.53; for schools of law, \$20,422.13; for agricultural and scientific schools, \$481,420.99; for female seminaries, \$689,993; for libraries and normal schools, \$1,020,000; for academies, \$306,040—being a total of \$9,956,194.28.

*FEMALE EDUCATION IN RUSSIA.*

CATHERINE the Great was the first Russian sovereign who took an interest in female education. In 1764 she established a school for girls in the Convent of the Resurrection, built by the Empress Elizabeth on the banks of the Nerva. Of the five hundred pupils who were admitted at the age of six, and graduated at eighteen, half were of the nobility, and half of the middle classes. The principal, Madam Lafond, a lady of French extraction, had under her supervision eight sub-principals and forty teachers. Tuition was not only free, but the empress gave each pupil a dowry at graduation; \$1,460 to the aristocracy, and \$73 to the commoners. Such a marked distinction between the two classes, at a time when the order of nobility in Russia had lost all political significance, was particularly injurious in a school. One class was finely dressed, the other was clothed in coarse materials; the former were taught the "polite branches," the latter learned to sew, wash and cook. But we think that utility, rather than class prejudice, influenced Catherine II. She writes to Voltaire: "We instruct the pupils that they may be able to make themselves agreeable to the families which they may enter. We wish them to be neither prudes nor coquettes, but good mothers, and capable housekeepers."

Another feature of her system of education was her distrust of home influences. The ideal education in Russia was a school whose vigorous laws prevented as far as possible all vacations and family intercourse; Catherine believing, it is said, that society in her time was a prey to corruption, and that it was impossible to rear a pure and chaste generation by any other system. She lavished upon the young captive an affection almost maternal, heaped honors and marks of favor on the most distinguished pupils, and allowed them to wear her monogram in gold, all their lives. She delighted in diverting and purifying herself by contact with their innocence, and, like Madam de Maintenon, she enjoyed having them represent French plays for her. In a word, the life which the pupils of the Resurrec-

tion led was that of a convent, with an occasional glimpse of the splendors and dangers of the court; a convent life, but a convent of which Catherine the Great was abbess.

But her work was by no means perfect. She encouraged superannuated rivalries and pretensions of caste and class among the pupils. She endeavored to dispense with parental coöperation in the education of children, and was ruled by a prejudice too narrow to meet the exigencies of life. Even the luxury which Catherine II. displayed in all her schemes, a luxury which might produce an injurious effect on poor young persons, whose dowry of \$1,460 could not secure them a fortune, served at least to awaken public opinion, and to open the eyes of the Russians to the importance of female education, a question which had until then been generally neglected. Besides, notwithstanding the word "convent," we must not lose sight of the fact that this was the first attempt at secular education. At that time, even after Peter the Great, Russians had no conception of instruction other than that imparted by the clergy. Parents cried when obliged to place their children in secular schools, as in the days of St. Vladimir, Russian mothers were in despair when they saw their children forced to learn those dangerous branches of witch-craft,—reading and writing.

Another empress developed the idea of Catherine. Maria-Feodorovna (Sophie of Wurtemberg), the widow of Paul I., devoted herself to founding hospitals, asylums, and especially schools for girls. The immense fortune which she bequeathed to these charitable institutions is now under the control of a special department, the department of the Empress Maria.

For a long time attention was directed exclusively to the education of daughters of the nobility, and institutions were founded for that purpose. They are now quite numerous. Seven of the principal ones are in St. Petersburg, four at Moscow, and about fifteen in other cities. These establishments have retained some of the characteristics of that founded by Catherine II. They have been accused of neglecting scientific instruction, history, geography, natural sciences, and mathematics, but now their standard approaches more and more that of the gymnasia. The living

languages, however, and particularly French, are learned with a perfection not attainable elsewhere. The pupils in boarding-schools are in constant intercourse with teachers, who converse with them in French, German or English, while on the other hand students who live at home, and do not hear foreign languages spoken, quickly forget them. Much has been said of the disadvantages of boarding-schools. However great may be the devotion, and however superior the education of those who are called to supply the place of parents, it is impossible, in the generality of cases, to replace them entirely. There is something artificial and abnormal in a convent life, deprived as it is of the sympathy, counsel, and experience, which is found in the family. Uniform rules, which subject the most diverse characters and organizations to the same plummet, finally destroy all individuality. A child cannot with impunity be condemned for fifteen years to work, sleep, eat, and play, at certain hours, while hundreds of other children do exactly the same things at exactly the same times. Toward the end of the course discipline is slightly relaxed, parents are admitted to the parlor during certain hours, and generally vacations are granted.

These institutions may, however, justly be reproached with having preserved the exclusive character of that founded by Catherine II.; admission is not free. For example, the one at St. Petersburg admits to the "Society of instruction for noble girls," only those whose fathers hold the rank of colonel or councillor of state. At St. Elizabeth even those who pay must be girls whose fathers belong to the hereditary nobility, while royal assistance is granted only to those whose mothers are members of the order of St. Elizabeth, and whose fathers have at least the rank of captain on an army staff. At the school of Alexander, the *tchin* of lieutenant-colonel or titular counsel is demanded. The institution of Paul is the most democratic of all; a certain *tchin* is required in order to obtain pecuniary aid; but girls of all classes are received as boarders, provided that the father is not obliged to pay poll-tax; so that commoners, whose citizenship is well substantiated, or merchants duly enrolled in a *ghilde*, may send their children there; but the

daughters of a free peasant or rich farmer are excluded. While we admit that some institutions have half opened their doors to girls not belonging to the nobility, still we cannot affirm that they are especially designed for them, to say nothing of the repugnance with which a commoner would regard being separated from his daughters, and seeing them instructed in ideas foreign to their position in life.

At the same time we cannot refuse a tribute of praise to the work of the Empress Maria-Feodorovna. Twenty-six large institutions are to-day open to the daughters of the Russian nobility, a class which is constantly recruited from the lower ranks, because of the fact that those who are distinguished for civil or military services are rewarded by a patent of nobility. The women of the Romanof dynasty have set a good example. They have not only used public funds for improving the condition of their sex, but they have devoted their private fortunes to the same purpose. By delicate attentions to the pupils, they have enhanced the value of education. The festivals of the institutes are fêtes for the court, as well as for the schools. The empress, emperor, and princes of the imperial family, are present at the distribution of prizes, and each in turn gives a fête to the class graduating from the convent. In apartments of the imperial residences about St. Petersburg, it is not unusual to find portraits of graduates. The girls who, in leaving the palace decorated in their honor, are often obliged to seek an humble position, carry with them pleasant memories and encouragement from that one day of splendor, and sometimes regrets and fancies may haunt them. But never mind; let us do the Russian rulers justice: in founding these institutions they have shown that they have interested themselves in female education more from the love of it than from political reasons.

In the meantime the middle classes seemed to be forgotten. The institutions being almost entirely closed to them, there was nothing left but private schools. It is hardly probable that these were superior to the public schools as regards the programme or method of study, for the great awakening and progress of education dates only



from the beginning of the present reign. Let us quote one of the most severe passages of Gogol in his "Ames Mortes." He introduces to us a country gentleman, Tchitchikof, and his wife Manilova, he traces the portraits of the couple, their quaint good humor and the "surprises" to which the wife periodically treats her husband: for example, when on his birthday she presents him a Greek hat embroidered with her own hands, or a tooth-pick box ornamented with beads.

"Manilova had received a good education. Now a good education, as everyone knows, is to be obtained in boarding-schools, and in boarding-schools, as everyone knows, there are three things which constitute the foundation of human perfections: French, indispensable in polite family intercourse; playing the piano, in order to make the husband's time pass pleasantly; and finally, that which especially concerns the economy of the family, the ability to embroider purses and to 'surprise' people. Besides these, there are various improvements and modifications of methods, particularly in these latter days; all depends upon the wisdom and talent of the principal. In some places they proceed after this manner, first piano, then French, and finally the ornamental branches. Others begin with the ornamental part, that is with embroidering purses and surprising people, then French, and piano last of all. There are 'different ways.'" Different ways no doubt, but to us they all appear to have the institution of Catherine II. for their starting point.—*Revue Des Deux Mondes*.

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A BOSTON school teacher says the following occurred in her school: Question—What is a point? (Answer—A point is that which has position, but no length, or breadth, or thickness.) The reply given by one of the class was—"A point is that which has physician, but no length, nor strength, nor sickness.



## GEOGRAPHICAL NOTES.

UNITED STATES.—At a recent examination for admission to Bowdoin College, according to the *Concord Monitor*, the written papers on geography contained the following: "Iterly" for Italy, "Merrymac" for Merrimac, "Pernobscot" for Penobscot, "Florady" for Florida, "Mississuri" for Missouri, and "Nareganset" for Narragansett. The Catskill Mountains were credited to Vermont by one writer, by another to Pennsylvania: the Alps to Asia by a third. Stockholm was set down as the capital of Holland; Berlin of Spain. Geneva was transferred to Italy; the Rhine was said to flow into the Atlantic; the Danube into the Baltic.

—A Maryland and Delaware Ship Canal Company has been chartered by the former State and authorized by the latter "to cut and make a canal to connect the waters of the Chesapeake and Delaware Bays, which shall be and remain a public commercial highway, open to all vessels upon terms of the most exact equality," and so constructed as to enable the largest vessels to pass each other. There seems to be no doubt that the enterprise will be seriously undertaken, as the advantages of such a short cut (especially to Baltimore) can hardly be overrated. The opportunity might be improved to import foreign labor of good quality, such as the Italians who were misled into coming to New York last winter, but who proved to be a most lucky reinforcement on account of the severity of the season, which ensured them employment on the streets. Italians, it will be remembered, excavated the Suez Canal. Secretary Stanton once threatened to set up a Government saddlery in Southern Delaware in order to outvote the native aristocracy of that part of the State, which has under the Constitution an undue preponderance in the Legislature. The presence of naturalized citizens in large numbers for a space of two or three years might easily lead to a political revolution. The termini of the canal have not yet been selected. On Delaware Bay the breakwater at Lewes seems

the natural embouchure; on Chesapeake Bay the choice evidently lies between Sassafras, Chester, and Choptank Rivers.

—The Legislature of New York, contemplating the vesting in the State of the titles to the timbered regions of the Adirondack wilderness, authorized an accurate survey of that region by Mr. Verplanck Colvin, who corrected the heights of many mountains, and exposed numerous errors in regard to the water-sheds, besides arriving at some very important conclusions. Lake Champlain, by the way, was found to be 91 feet above tide-water. Mr. Colvin says that

“It is now a question of political importance whether the region covered by this survey should not be preserved in its present primitive condition as a forest-farm and a source of timber-supply for our buildings and our ships. The deprivation of a State of its timber is a grave error in political economy, and at this time when the Western States of the Union, feeling their deficiency, are laboriously planting forests, it behooves us to see to the preservation of those with which we are spontaneously blessed. The question of water supply is also intimately connected with this proposition. I have elsewhere expressed my opinion that within one hundred years the cold, healthful, living waters of the wilderness—the home of the brook trout, a fish that cannot exist in an impure stream—will be required for the domestic water supply of the cities of the Hudson River Valley. If the present ratio of increase of population continues, the Valley of the Hudson River must eventually contain one long marginal city, extending from the Mohawk River to New York. The Adirondack Wilderness is the only water-shed which will afford a sufficient supply of pure water for such a population as will then exist.”

He proposes an aqueduct 200 miles long connecting with a dam on the Hudson River just above its junction with the Schroon River.

—Lieut. Wheeler has ascertained that a railroad can cross the Colorado River near the foot of the Grand Cañon in Arizona.

CENTRAL AMERICA.—San Salvador, capital of the republic of the same name, and which has been a continuous settlement on its present site for nearly 340 years, suffering in that time from earthquakes nearly as much as Antioch, and being destroyed by one on the night of April 16, 1854, has been again annihilated. Premonitions and slight shocks had pre-

vailed from the first of March, and had induced most of the inhabitants to remove from their houses or from the city, camping in the open places, so that when the prolonged and awful quaking of the 14th occurred in the early morning it caused the destruction of comparatively few lives. The only house absolutely uninjured was a wooden frame one, while the low stone and adobe dwellings, together with the Cathedral and other public buildings, were reduced to ruins. San Salvador lies about thirty-five miles from the sea, its port being La Libertad, which also felt the shock, though less so than one on the 4th of March. The Nicaraguan port of Corinto is 125 miles distant, and there a sudden wave drifted an incoming steamer in such a manner as to stop her engines. San Salvador is surrounded by volcanoes on every hand, and indeed is built at the foot of one which bears the same name—or rather we may call it misnomer. Violent blows on the soil, or the rapid passage of horses over it at any time, is followed by distinct echoes and reverberations. The coming of earthquakes is usually foreboded by domestic animals sooner than by man, as is manifested by their uneasiness and disposition to break loose and stam pede.

—The Darien Exploring Expedition under Commander Selfridge (stereoscopic views of whose former explorations were described in our March notes) was engaged that month in exploring the divide between the Pacific Ocean and the head waters of the Atrato River, which empties into the Gulf of Darien. One of these tributaries, the Napipi, is said by a *Herald* correspondent to possess in its valley all the qualifications requisite for the proposed canal. Another, further north, the Tracundo, was also explored with great difficulty to its junction with the Cuia.

SOUTH AMERICA.—The famous volcano of Cotopaxi, in Ecuador, has been ascended by a German savant, Dr. Reiss, who, with Dr. Stubel, has for the past four years been exploring the valley of Quito. The ascent took place on the 27th and 28th of November last, from the south-western flank of the mountain, the night camp being at an altitude of 15,179 feet. Lava streams were encountered, still smoking—

the same, probably, which flowed in 1854, and which, by melting vast quantities of snow, caused much devastation in the valley by floods. The crater, when reached, presented an elliptical form, with its major axis lying north and south.

"The stones which were continually falling in from all sides, but especially from the west side, rolled together as to the bottom of a funnel; there were no signs of a level bottom. The depth, roughly estimated, appeared to be 1,500 feet. The side of the funnel least inclined, and by which alone it is possible to descend, is the south-west; but here are large fumaroles sending forth dense masses of vapor charged with gas, and having a temperature of 156 degrees. Around these fumaroles were masses of sulphur and a deposit of gypsum mixed with chloride of lime. This is of great interest as being the first instance of a chloride being found among the products of the South American volcanoes. Humboldt thought that the absence of hydrochloric acid was a characteristic of the new world volcanoes. The barometer gave 19,660 feet as the altitude, while the doctor's trigonometrical observations, repeated at various times from independent bases in the valley, had given him 19,496 as the height of the north peak, and 19,427 for the southern. Both results exceed the altitude estimated by other travelers. Humboldt made it 18,880 feet. Dr. Reiss says he felt no inconvenience from the rarefaction of the air. This difficulty in ascending high altitudes begins at the height of 12,000 to 13,000 feet, but does not appear to augment with the altitude. All the peones with Dr. Reiss complained of sickness, and one stout fellow bled at the nose. The mules also suffered much above the altitude of 13,000 feet; but his dog, although evidently troubled for breath, followed him to the crater."

ASIA.—The American Palestine Exploration, under command of Lieut. Steever, is now in the field of its labors, which, by the concession of the British Exploration, consists of the whole country east of the Jordan, embracing the old territories of Moab, Gilead, and Bashan.

—The American Secretary of Legation at St. Petersburg, Mr. Eugene Schuyler, has obtained leave to make a summer tour in Central Asia, in the debatable land between Russia and Afghanistan. He proposes to aid in verifying the maps of the country, to settle its topography and limits, to note its resources and products, and to observe the condition and language of its inhabitants. The results of his explorations and observations will probably be communicated to the American Geographical Society.

—The taking of the Census in Bengal, covering an area of 250,000 square miles and a population of nearly 67,000,000 souls, has cost the Government not more than \$135,000. This economy was effected by getting the people to number themselves, and the leading inhabitants in every district appointed to this service without pay showed a marked appreciation of the privilege.

"In the Santhal country the village headmen kept their reckoning by means of knotted strings of different colors, black for male and red for female adults, white for boys and yellow for girls. In some villages seeds or gravel served the same purpose, one person being told off to count the men, another the women, and so on. In Orissa, four months before the Census, Mr. Ravenshaw went from village to village, preparing the people for what was coming, until even the rude hill chiefs entered heartily into the scheme. Very few cases of extortion have been discovered, and only one riot took place. The preparations for taking the Census gave birth to a rich crop of absurd rumors among the more credulous classes. In Orissa it was widely believed the Government was going to repay itself for the cost of the famine. Some people thought that only male adults would be taxed, because their names only were recorded. One man refused to let his baby be numbered because it was too young to be taxed. Many people fancied that the Census was a means of forcing immigration to Mauritius and Assam. In Mürshidabad it was rumored that the authorities designed to blow the surplus population away from guns. Elsewhere it was given out that men were wanted to fight the Russians, or to serve as coolies against the Loshais. In Faridpúr the surplus women were to be carried off to supply the want of women elsewhere. In Noakhali it was 'General Sahib' who had a longing to look at all the women of a certain age. Others thought that everybody was to be vaccinated forthwith. In the Tírhút no one would stir out of doors on the night of the Census for fear of being crippled by the 'ill wind.' These fears, however, seem to have been generally removed by the explanations of the Government officers. 'What wonders the British Government has achieved,' exclaimed the villagers of Rájshahai. 'The great Akbar never attempted such a thing.'"

—In passing from Burmah across the Chinese frontier into Yunnan, an expedition sent out by the British Government in 1868 encountered a people called Shans, together with what may be regarded as transitional varieties between them and the Burmese and Chinese respectively. The Shans have a method of concealing gold and precious stones by burying them beneath the skin of their chests and necks

by making slits, through which the coins or stones are forced, and which subsequently heal up. A second cut made on the spot serves to extract the valuable object.

"The Kakhyens or Chingpaws, though hemmed in on either side by Buddhist nations, still retain an ancient worship of good and evil spirits whom they call 'nâts,' and to whom they are constantly making propitiatory offerings of pigs, fowls, and rice. Their method of producing fire is very remarkable, and is effected by 'the sudden and forcible descent of a piston in a closed cylinder. There is a small cup-shaped cavity at the end of the piston rod, into which a little tinder is inserted. The piston is then introduced into the cylinder, which it tightly fits, and by a blow is made to descend with great rapidity and force, and is as rapidly withdrawn, when the little pellet of tinder is found to have become ignited.' The instruments are not more than four inches long, and are in general use. It would be highly interesting to trace the origin and date of this invention."

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*Periodical Literature.*—The *Nation* for April 24, May 1, and May 8 contained three highly interesting articles on the three northern and northwestern provinces of China, viz., Shanse, Shense, and Szrchwan, as observed by Baron Richthofen in his journey through them, undertaken with the support of the Shanghai Chamber of Commerce.

*Cartography.*—The Russian Imperial Geographical Society has been presented with a native map of Japan, on the scale of about 6 miles to an inch, which cost the author the privilege of dying in his own country. This map of Inn-Kami was used by the English Admiralty in preparing its charts of the coast of Japan—a testimony to its great accuracy. The plates were burned at Yedo in the revolution of 1868, and copies are now extremely rare. Petermann's *Mittheilungen* for March 4 offers a map of Southwestern Germany at the outbreak of the French Revolution in 1789, and the sight of it, with its intricate colored patchwork of petty territories, is enough to make any one an ardent advocate of German unity. The map is borrowed from the current issue of Spruner's Historical Atlas (New York: L. W. Schmidt.) Petermann also borrows from Stieler's Hand-Atlas a map of the eastern half of Australia, in order to show the telegraphic system of that continent. No. 43 of the *Journal* of the Berlin Geographical Society has a map of all the routes leading from the Caspian Sea to Khiva.



—The *Challenger* arrived at St. Thomas, March 16, and off Sandy Hook en route for Halifax the last week in April. Its constant soundings after leaving Teneriffe showed that a pretty level bottom runs off from the African coast, deepening gradually to a depth of 3,125 fathoms at about one-third of the way across to the West Indies. If the Alps, Mont Blanc and all, were submerged at this spot, there would still be half a mile of water above them. Five hundred miles farther west there is a comparatively shallow part, a little less than two miles in depth. The water then deepens again to three miles, which continues close over to the West Indies. At the deepest spots both on the east and west side of the Atlantic, the dredge brought up a quantity of dark red clay, which contained just sufficient animal life to prove that life exists at all depths. No difficulty was experienced in obtaining these deep-sea dredgings, and it was merely a question of patience, each haul occupying twelve hours. In depths over two miles little has been found, but that little was totally new.

—A Russian man-of-war was sent to Papua towards the end of November in search of the missing Russian naturalist, Michlucha Maclay. See our December Notes, 1872.

—Mr. Ernest Giles, whose expedition was referred to in the same Notes,—namely, from Charlotte Waters, at a point on the Overland Telegraph, 570 miles north of Port Augusta, in Australia, westward,—has returned, having met with but partial success, on account of deserts among his companions.

—A despatch from London, dated April 27, states that the *Daily Telegraph* explorer in Assyria has met with great success. He has found eighty new inscriptions, including histories known and hitherto unknown of the Assyrian Kings. Among his discoveries is a highly important tablet, containing a collection of proverbs in two languages, which will aid in the further elucidation of the whole class of inscriptions. Many of the inscriptions have definite dates.

*Photography.*—By special favor of the Messrs. Anthony, we are furnished this month with passports to the National Yellowstone Park—as yet not opened to the general public, or if open, not accessible to you, reader, or to us. Our first object is the *Crater of the Grand Geyser* (No. 18), in the valley of the Fire Hole River. Deprived of its coloring, it doubtless loses something of its picturesqueness, though when quiescent as here represented, it has “no raised rim, and is a very modest-looking spring,” whose oblong orifice is enclosed by “rounded masses of silica, from a few inches to three feet in diameter, looking like spongiform corals.” (See for this and the succeeding Yellowstone views, Dr. Hayden’s Report for 1871, or the more handy “Wonders of the Yellowstone,” by James Richardson, published by Scribner, Armstrong & Co.) When in action it spouts to the height of 200 feet. The distant view in this picture is very pleasing.



No. 51, *Tower Falls*, (156 feet high), has all the elements of the picturesque, the stream seeming to issue from a hole in the side of a grand pinnacled cliff. "One could almost imagine," says Dr. Hayden, "that the idea of the Gothic style of architecture had been caught from such carvings of nature." This feature is much more striking, however, in No. 98, *Palisades of the West Gallatin*, where we have most beautiful cathedral-like forms, harmonizing perfectly with the evergreens on the river bank. No. 112, *Head of Black Fork*—a name which we do not find in Hayden's Report—gives a noble vista down a valley between lofty and snow-clad ranges. We presume it is that odious vegetable growth, the sage brush, which is most prominent in the foreground of No. 137—*Shoshone Village in the Wind River Mountains*; but the eye need not rest long on it, nor on the two Indians squatting in the midst of it. It may delight in the dotted wigwams near the foot-hills, or take its final enjoyment in the lovely mountains just outlined beyond. The grim icy range of the *Tetons*, No. 66, looking south, rivals any Alpine scenery we ever beheld; which we take to be enough of a compliment. In No. 116, we have a curious illustration of *Beavers' work in cutting down trees*. It is hard to believe that the woodman's axe has not been heard here.

From the Tetons to Utah is but a step—at 591 Broadway. That step lands us first in Salt Lake City and before *Brigham Young's House* (No. 78 of "Views in the Cañons of the Colorado River and among the Aztec Cities of Arizona," taken by Powell's Exploring Expedition; concerning which we may refer to our Notes in the MONTHLY for April, June and September, 1872.) The broad and well-shaded avenue on which it is situated, and the curious barren range in the distance, will chiefly excite attention. In No. 75 we have the famous elephant-backed *Mormon Tabernacle*. *Johnson's Ranch* in Southern Utah, No. 1, described as the future stronghold of the receding Mormons, is a bird's-eye view of a broad and probably fertile valley. For the character of this part of Utah see our March Notes. The Ranch is about 15 miles from Kanab, an actual Mormon settlement, 70 miles from which again Kanab Cañon, the largest of the subsidiary cañons, with walls 1,500 feet high, enters the main Cañon of the Colorado. It is cut through the so-called Kibab Plateau or Buckskin Mountains, and Nos. 35 and 37 are taken from this elevation. They show the most remarkable series of peaks and chasms of which the mind can conceive, even in dreamland or cloud-land. No views that we have yet named can compare with these in singularity and grandeur. No. 39, *Sentinel Rocks of the Kibab Plateau*; No. 4, *Peaks in Kanab Cañon*; No. 14, *Camp Scene* in the same, in which one feels the awful height of the sides of the cañon; No. 7, *Fern Shower-bath* in the same—all these fully initiate the beholder into the mysteries of this wonderful region. A pleasant amphitheatre is *House Rock Springs*, on the east side of the Kibab Plateau, Arizona, No. 40 (see June Notes, 1872); and still more open and inviting is *Surprise Valley*, No. 27, with what we take to be a cottonwood grove

along the stream at the bottom. No. 30 shows the *Outlet of Surprise Valley*—a remarkable instance of erosion; the title on the back refers to hieroglyphics (see June Notes) invisible to our search. We come upon the Aztec cities east of the Colorado with No. 47, the *Moquis Pueblos*, built upon a high *mesa* or table-land, which really contains three towns (*pueblos*), as shown in No. 65, where the flat-sunk roofing of the nearer houses is well-shown. This view is remarkable for clouds reflected in a pool in the foreground. No. 49, *Oribay*, with more of these curious stone and mud dwellings; still better No. 57, *Me-shong-an-avah*, showing how these cities are built around a square without gate or other ground entrance, accessible only by ladders to the first story, whence steps and ladders raise one to the second and third. The interior view of this town, No. 58, reveals the same mode of reaching the common court-yard or plaza; every man's house being truly his own castle. A group of *Aztecs* is pictured in No. 71; of *Navahoe Indians* in No. 45. We take leave of this fascinating collection with No. 15—a *Barrel Cactus*, over six feet high, the figure of a man conveniently furnishing a standard.

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### DO PLANTS BREATHE?

“ It is my faith, that every flower  
Enjoys the breath it breathes.”

SO sang the poet Wordsworth; and, though science has as yet failed to discover any foundation for the poetic fancy that plants have souls, and that they enjoy the sunshine, or dread the frosts of winter, this much has been clearly proved, that plants *breathe*, and that by that breath they live. Every green leaf is a delicate lung, and acts the same part in the economy of nature that the lungs of animals do; separating from the air that element which the growth of the plant demands, and discarding or *exhaling* that which is of no service.

As, for the growth of the animal, the body requires oxygen: so, for the support of all vegetable life, carbon is needed. When men breathe, they take into their lungs oxygen, which there combines with the carbon of the blood, forming a third compound gas, known as carbonic acid, which is breathed out, and in this state is of no value, but rather dangerous to *animal* life. Were there no way of restoring

to the air the oxygen which is united to carbon in this gas, then would all animals sicken and die, just as do those birds and beasts which attempt to cross that dark valley in Africa which is said to be so full of carbonic acid as to poison all who enter it.

But, though the lungs of man and beast are not able to obtain the needed sustenance from the dangerous gas, it is not so with the leafy lungs of the plant. So delicate are these organs, that they take up freely the carbonic acid; and as, in this case, the food they want is carbon, they retain this, and breathe back or exhale oxygen, which is now free, and ready for man's use again. But how can you prove this fact, that plants breathe out oxygen? The answer is given in the illustration before us; and, as the apparatus used is extremely simple, an explanation of it will best convey our meaning. Having

placed in a glass funnel a few fresh green leaves, invert it in a tumbler of fresh water, as here shown. Now close the opening above, and draw off some of the water in the glass. If this vessel be now placed in the sunlight, bubbles of gas will form on the leaves, and rise into the top of the closed funnel. When a suffi-



cient quantity of the gas has so collected, remove the cork, and hold above the opening a glowing match or shaving. The result of this will be, that the gas which comes from the funnel will strike the glowing coal above, and cause it to ignite,—a result which is evidence, together with certain others, that the gas was oxygen. In order to render the idea more plain, an illustration was prepared which exaggerates a little; and yet with care and patience the result may be satisfactory, though it would be best, if possible, to insert the glowing coal into the gas, rather than trust to the force of the current to light it. Above we have chosen to present and illustrate this simple fact, since it serves to show how man is dependent upon the vegetable world, not for food merely, but for the very air he breathes.—*Industrial Monthly.*

## CORRESPONDENCE.

THE KINDERGARTEN IN THE PUBLIC SCHOOLS OF NEW YORK.

**M**R. EDITOR,—The following brief communication is not merely of a personal, but also of a professional interest; otherwise I would not appeal to your sense of justice to lay it before your readers.

The annual report of the President of the Normal College of the City of New York, for the year ending December 31st, 1872, contains the following paragraph:

“THE KINDERGARTEN SYSTEM.

“I regret exceedingly that the experiment initiated by Dr. Douai to test the merits of Froebel's system was not successful. It is not necessary to enter here into any explanation as to the cause of failure; it is enough to know that the fault is not in the system itself, for recent investigations in Germany have revealed the fact that the young men belonging to the gymnasia and the universities who had received a Kindergarten training in childhood made the best and most accurate scholars. In the new Model School . . . it would be wise to form a Kindergarten class and give the system another trial.”

This passage is so artfully worded as to leave no other inference than that the subscriber is responsible for the failure of the trial mentioned. Here are the facts, which will not be denied.

In the fall of 1870, Miss Elizabeth Peabody, who had delivered in New York one or several lectures on the Kindergarten system, recommended me to members of the Board of Education of that city as a proper person to deliver some lectures on the same subject before the pupils of the Normal College. The member of the Board who engaged me and my daughter, a practical Kindergartener, was Mr. Nathaniel Sands, who afterwards left the arrangements in the hands of the President of the Normal College. The purpose for which we were engaged was not “to test the merits of Froebel's system,” but it was that of imparting to the pupils of the Normal College a first acquaintance with the theory and practice of that system in a course of twenty short lectures. It was understood by all the contracting parties that these lectures were to be followed by a course

of normal Kindergarten training under the guidance of other persons, to be continued for a sufficient period of time ; the lectures were solely to be an initiatory step to that measure, for the success of which all the conditions necessary were wanting for the moment.

After my first lecture, I was coolly notified that the purpose was to be changed. Instead of *lectures* I was to give *lessons* in Kindergartening, lessons not to the pupils of the Normal College, but to the teachers and children in the Model Primary School ; this change was said to be for the better, because the Board of Education was in full earnest to make forthwith a practical beginning with the system on a small scale, and to have the teachers of that model school acquainted with the art. I protested against this breach of the contract, explaining that nineteen lessons, which would barely suffice to present every branch of Kindergarten occupation but once, and for a short time, might prejudice a proper appreciation of the noble cause, unless the teachers to be initiated were both able and in earnest to study the art privately besides. At last, however, I was induced to believe them in earnest, and hoping that the lessons might benefit them and disarm the prejudices of others, I acceded to the new demand. In vain was I warned by two literary New Yorkers, deeply interested in the cause of education, that the experiment might be intended to be futile and so might prejudice the cause itself. I could not believe in such a purpose.

It turned out to be an experiment under insuperable difficulties. A double parlor stuffed with 160 children of from six to eleven years of age, and seven teachers, beside ourselves and some occasional visitors, was our theatre, and this fact alone was almost sufficient to thwart the purpose intended. But the greater obstacle to success was the aversion of the model teachers, or at least their principal, to the innovation, an aversion which could not long be disguised.

In the City of New York they carry out the novel plan of handing over a model primary school, not to experienced and tried practitioners, with the occasional aid of incipient teachers, who are to make their first experiments under the guidance of the former. No, the model teachers are—who?

but the recent graduates of the Normal College, those who have graduated with the highest honors. Of the seven with whom we had to do, only one seemed to have a short practical experience as a teacher. In the Normal College itself, which is more a lady's high school than a professional training institute for future teachers, no occasion whatever is presented to the pupils to witness, much less to practice teaching as an art. The graduates may be worthy of the honors conferred upon them, but they cannot be expected to be a few days after graduation teachers of model classes, much less to be judges of highest resort about the "merits of Froebel's system." But they were left to be almost the only judges on our efforts, efforts of a truly herculean kind. Not one of the influential members of the Board of Education, not one of the Superintendents, save one who dropped in twice for half an hour, made his appearance in our lessons. Misses in their teens were the arbiters of "the merits of Froebel's system," as presented by us.

These facts will, without any further comment, explain what I began to see by the time those few lessons came to an end, to-wit, that our experiment would leave no perceptible fruit. That it was intended to be fruitless, on the part at least of some influential persons, did never enter my mind till now that I read the above paragraph. The latter would never have been inserted in an official report, unless it was for the purpose of an aspersion on my professional character, an aspersion which, to some New York politicians, may seem to be a proper revenge for my criticisms on some features of their school system.

ADOLF DOUAI.

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TURKEY has recognized the right of literature by an enactment of a copyright law. The exclusive property in an original work, with the right of translation, is conferred on the author, his heirs or assigns, for forty years: for translations, the privilege to be for one-half that period. All rights can be sold for the whole or any part of said term, and piracy of copyright will be punished by penal measures.



*EDUCATIONAL INTELLIGENCE.*

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**CALIFORNIA.—OAKLAND.**—The California University is as lucky as it is deserving. Gifts are pouring upon it in an avalanche. There is the Tompkins \$50,000 Oriental Professorship; there are the Toland Medical College property, Mr. Reese's gift of Dr. Lieber's library, and his intended purchase—a large and valuable library, for the university in Europe. Large and well-arranged cabinets of mineralogy, geology, and archæology, have just been presented; also a quartz battery and ten acres of land adjoining the university. Several gentlemen have lately made gifts in money.

**FLORIDA.**—In the last report, the whole number of schools in the State was given as 331. The establishment of 113 additional schools raises this number to 444, an increase of more than one-third in the number of schools. The aggregate of pupils has also increased from 14,000 to 16,258. The ratio of pupils enrolled in the common schools last year was about one-fifth of the youth between 4 and 21. This year it is over one-fourth. If it is saddening to reflect that three-fourths of the youth of the State are yet unreached by the educational system, it is surely encouraging to know that the ratio is so rapidly changing. A similar rate of increase, could it be secured, would in less than twenty years enroll every child in the State in the public schools.

**INDIANA.—BLOOMINGTON.**—Another building is to be added to the Indiana State University. It will be useful above anything else for the accommodation and exhibition of Dr. David Dale Owen's very valuable collection in mineralogy, geology, and zoölogy. The second floor will be used for the library of the institution. This already numbers 7,000 volumes, and \$2,500 is expended upon it every year. The attendance during the present year has been greater than at any previous time in the history of the university. The establishment of two additional chairs in the Literary Department is contemplated.

MAINE.—Whole number of scholars between 4 and 21, 226,751, of whom 49 per cent. were regular school attendants. 78 new school houses have been erected during the past year, making the present number 462. The aggregate amount expended for schools is \$991,607. The Superintendent recommends some form of intermediate inspectory agency between the Town Committees and State Superintendent, to increase the efficiency of the present supervision. He also favors placing free-hand drawing on the list of prescribed studies. Another recommendation is: "some form of legislation to secure the education of *all* the youth in the State."

MASSACHUSETTS.—On the 22d of April, Mr. John Anderson formally transferred Penekese Island to the trustees of the "Anderson School of Natural History." The grantees named in the deed are Louis Agassiz, Alexander E. R. Agassiz (his son), Thomas G. Cary, Martin Brimmer, Theodore Lyman, and their successors, as trustees of a normal school for teachers and students of natural history. With the island and appurtenances, Mr. Anderson gives two bonds of \$25,000 each, New York City Central Park Addition Fund of 1874. The deed appoints Prof. Agassiz, President of the Board of Trustees, and Director of the school, with the sole authority to appoint teachers and lecturers, and prescribes the course and methods of study, and Mr. Cary is appointed treasurer. Mr. Anderson reserves the right to reside on a promontory of about fifteen acres, at the eastern extremity of the island; also, the right to appoint an additional trustee. Five trustees shall always be residents of Massachusetts, and one of New York City. The trustees are authorized to expend a portion of the fund of \$50,000 for the erection of such buildings as are immediately needed, but the fund shall be made good to \$50,000 from the first donations subsequently received. The specimens in natural history required for the use of the school shall be furnished from the Museum of Comparative Zoölogy at Cambridge, and the school shall be the educational branch of the museum, and it may be the exclusive place of instruction in natural history in connection with Harvard College,

but its business matters must be kept totally distinct from the college.

The people of New Bedford propose to further endow the school with a gift of \$10,000, and Mr. Anderson expresses his confidence that some of his New York friends will add to the fund by substantial gifts. Prof. Agassiz's dream is to make the school earn a fame equal to that created by Liebig's for the University of Giessen.

NEW JERSEY.—ORANGE.—A law of this State, as our readers have already been made aware, offers annual aid to school districts, to the amount of ten dollars, towards building up a school library; the gift being conditional on the raising of twice that amount. The High School District of Orange lately raised \$40, and besides earning the \$10 promised by the State, received a gift of \$50 from the New England Society, making a sum total of \$100. This was expended in increasing the scanty reference library of the High School, and we give below the list of works purchased:

Webster's Dictionary; Adler's German Dictionary; Spiers and Surenne's French Dictionary; Andrews' Latin Lexicon; Smith's Dictionary of Classical Biography and Mythology (3 vols.); Long's Classical Atlas; Stieler's Modern Hand-atlas (11 parts out of 30); Wheeler's Dictionary of Noted Names in Fiction; Bartlett's Dictionary of Familiar Quotations; Taylor's Words and Places; Globe Shakespeare; Abbott's Shakespeare Grammar; Marsh's Origin and History of the English Language; Wilson's Punctuation; Dana's Book of Household Poetry; Greene's Historical View of the American Revolution; Stearns's Concordance and Index to the United States Constitution; Dana's Geology; Gray's Manual of Botany, and Structural and Systematic Botany; and Gray's Human Anatomy.

The school already had on hand Worcester's Dictionary; Lippincott's Gazetteer; Thomas's Dictionary of Biography, and Appleton's Cyclopædia. These works, with those already enumerated, make up a library such as probably few schools of the same grade can boast of in any part of the country. At least, outside of the great cities, we do not know of one which will compare with it. Do any of our readers? Perhaps the most original feature of this library still remains to be mentioned. Together with the foregoing works there were procured two hand stereoscopes and 100

carefully selected stereoscopic views, the nucleus of a collection which can be indefinitely extended, but which already embraces glimpses of countries, peoples, and animal and vegetable life in all quarters of the globe. No greater aid could be imagined for the study of history and geography; and we may safely say that these views are nearly equivalent to as many volumes added to the library. The cost of them was included in the \$100.

NEW YORK.—NEW YORK CITY.—The Committee on Annual Taxes of the Board of Supervisors have made an elaborate report on the College of the City of New York, treating of its origin, history, and present condition. As the result of their investigation the committee recommend a change in the management of the introductory department. At present it is a great expense, is subversive of harmonious action and, although supported out of the general funds, it has become a separate concern. In the commercial course many of the studies are far beyond the comprehension of the students, and the committee question the wisdom of retaining this course as a branch of college education. They further suggest the abolition of the office of principal in the college as being not only superfluous, but actually injurious. Nominally the principal receives a salary of \$1,000, but in reality it is \$4,750, the extra \$3,750 coming from his appointment to a chair which has no existence. For these reasons the committee recommend an immediate abolition of the commercial course and of the office of Principal of the Introductory Department. The report also treats of the Chemical Department, and says that there are more persons employed in it than are necessary. In referring to the library, it says that its condition is far from satisfactory. The library is merely a collection of books, and not a library in the proper sense of the term. The salary of the Librarian is \$3,750 per annum, while the largest library in the city pays its librarian but little more than half that sum. Relative to the discipline of the college, it says that the rules of the college in regard to good manners, morals, and manly propriety have in certain instances been grossly disregarded.

CLINTON.—The Catalogue of Hamilton College gives the

number of students attending there as 149. During the past year donations to the amount of \$56,000 have been received, besides collections of coins, minerals, models of mechanical inventions, etc.

OHIO.—DAYTON.—Number of youth between 5 and 21 years of age, 14,828. Total number enrolled in public schools, 5,715. Total average daily attendance, 3,328. Accommodations are provided for 5,153 pupils. The school property is valued at \$395,465.

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### CURRENT PUBLICATIONS.

WE believe in illustrations. There is nothing like addressing the mind through the eye. Hence, when practicable, truth should be illustrated. This may be done by passing word pictures before the mental eye, or by means of cuts, diagrams, charts, etc., presented to the outward eye. Properly used, illustrations are efficient and admirable aids in imparting instruction. In some branches of knowledge, indeed, such as geometry and surveying, cuts and diagrams are almost indispensable. In others, however, such as mental and moral science, there is no place for aids of this kind. The only illustrations admissible must be in words. The same may be said of grammar. It is one of the most purely intellectual of all branches of knowledge, and really admits of no illustrating except in words, the things themselves with which it deals. Yet we have before us what professes to be an "illustrated" English Grammar.<sup>1</sup> Professor Holmes's little book contains just twenty-five illustrations, so called. Of these, twenty-one, considered as illustrations, are simply absurd. Take a specimen or two. To illustrate that the component parts of the sentence "Ships sail on the sea" are *words*, the learner is called upon to view a picture, not of ships, but of a barque, a schooner,

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<sup>1</sup> FIRST LESSONS IN ENGLISH GRAMMAR. (Illustrated.) By G. F. Holmes, LL.D., Professor of History, Literature and Rhetoric, in the University of Virginia. New York and Baltimore: University Publishing Company. 16mo., pp. 160.

a sloop, and a row-boat, moving over tolerably rough water; the barque crossing the path of the schooner, and the two propelled by winds seemingly blowing in opposite directions. Again, to show that "*gender distinguishes words with relation to the sex of the things denoted by them,*" (whatever that may mean,) we have a picture of a rustic bridge spanning a little stream, with a little girl at one end and a little boy at the other. The illustrating of conjunctions is effected by representing a steam-tug towing a ship with a row-boat attached to it. This, in like manner, is ridiculously absurd and meaningless. How such things can be called illustrations in the sense of being means of picturing to the eye what is taught in the words, we confess ourselves utterly at a loss to comprehend. If they are designed to attract the attention of children from the subject before them, and amuse them, they could not well have been more happily conceived. It is fortunate, however, that they are not more numerous. The only illustration in the book that really deserves the name, is on page 43, showing the relative meaning of certain prepositions. And yet this belongs rather to lexicography or the spelling book than to grammar. As a venture in the way of "illustrating" grammar, the book is positively an utter failure.

Its other merits, too, are more or less of a doubtful character. The book is mainly a compilation, with old errors in methods, definitions, and rules frequently reiterated. In the matter of arrangement the book is, in some respects, strangely faulty. The "Practical Suggestions to Teachers" as to how the book should be used, instead of following immediately after the preface, are placed as an appendix at the end of the volume, so that a teacher may not see them till he has gone through the book. In a similar manner, the directions to the learner as to the use he is expected to make of the "Exercises," instead of being invariably placed before, are often placed after the exercises. The volume also abounds with examples of the confounding of words and things; as, "A preposition is a word used to show *the relation of a noun* or pronoun to other *words* in the sentence." P. 44. (In this very sentence of Prof. Holmes's, does the preposition *to* show any relationship between the "words"



noun and words, or does *in* indicate that the "word" sentence is in the "word" words, or the reverse?) This confounding of words and things is a common error with careless writers and blundering teachers of grammar; and if their pupils find it hard to understand their meaning, is it any wonder? On page 143 is a "Remark" about "co-ordinate" conjunctions. The learner may be puzzled to know what these are, as such conjunctions are nowhere else spoken of. He may possibly conclude that they are the same as what are in other places called "co-ordinative." If he does, no thanks to the author. But the volume displays more or less want of care throughout. Of this we could give abundant evidence. But we have already given the little book more space than it deserves, and must drop the further consideration of it.

IN the preparation of the second volume of his *Student's Hallam's Histories*,<sup>2</sup> Dr. William Smith assures us that he has incorporated the whole of Sir Henry Hallam's last additions and corrections in the text, and only omitted the foot notes, which he seems to have regarded of little importance. The work, as it comes from Dr. Smith's hands, is a very valuable one for students of English Constitutional History, and as such we can conscientiously and heartily recommend it for the use of students; but we must caution those who like original editions or an author's text as he wrote it, that they will find that Dr. Smith has taken very considerable liberties with Hallam. In some instances several pages of the text are transposed without notice, to a note at the end of the chapter, as in the case of Hallam's analysis and criticism of Hooker's "Ecclesiastical Polity" in Chapter IV. In other cases considerable passages of the text are omitted without any notice of the fact. The foot notes, which in all Hallam's works are the very best portions of the work, are generally omitted, and often to the serious detriment of the book for the purposes of the scholar. We do not object to this mutilation of the book for the purpose of abridging it for the use of college students; probably for their purpose

<sup>2</sup> THE STUDENT'S CONSTITUTIONAL HISTORY OF ENGLAND. Hallam's Constitutional History of England, including the author's latest additions and corrections, and adapted to the use of students. By William Smith, LL.D. New York: Harper & Brothers. 1873.

it is better for being rid of some of the notes which to them would be but learned lumber; but for purposes of general reference we prefer the original work; and we are not quite ready to forgive Dr. Smith for giving the impression that this abridgment is quite equal or superior to the old edition. The series of student's histories by Dr. Smith are, nevertheless, remarkable for their careful condensation, retaining as they do so largely the best thoughts of the authors in their own language. We think the learned doctor must have taken lessons from that Mohammedan Mufti who condensed all the learning of the world for his master, from nine hundred camel loads of volumes, down to a single small volume.

"THE TREATY OF WASHINGTON,"<sup>(3)</sup> will be eagerly read, because of the interest of our people in the subject it treats of, and because Mr. Cushing's reputation leads one to expect an exhaustive and accurate account of it. But we lay the book down, feeling that we have learned little by its perusal. It tells us nothing which we did not know through the newspapers long ago, and while it is well to have the history summed up in one volume, we are disappointed to find it so meagre.

Mr. Cushing's position was such that he was thoroughly informed on all points in connection with the progress of the treaty, but he omits the minutiae, contenting himself with noting the barest outlines. For example, of the transactions between the 15th and 19th of June, when the "indirect claims" seemed likely to break the treaty, we know nothing, though of course, as Mr. Cushing says, many communications passed between the two governments. Mr. Cushing evidently writes as a private citizen, so a feeling of propriety need not have restrained him from entering more into details. But these are negative defects.

The most objectionable feature of the book is the unsparing abuse which is heaped upon Sir Alexander Cockburn. Indeed it appears to have been written to vent a personal spite. Were all the charges brought against Sir Alexander Cockburn true, which is questionable, it is very bad taste

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(3) THE TREATY OF WASHINGTON: its Negotiation, Execution, and the Discussions relating thereto. By Caleb Cushing. New York: Harper & Brothers. 1873.

for Mr. Cushing to prefer them, because Englishmen will naturally regard the book as semi-official, and will very properly be offended at it. It is not complimentary to England to assert that the man whom she has appointed as Lord Chief-Justice, and whom she selected as one of the Arbitrators, is ignorant of law and of the usages of ordinary politeness. That there was provocation for this attack in his speeches and manner is probably true, but it is very unfortunate that Mr. Cushing has abused him after such a savage fashion.

BRONSON'S ELOCUTION, so long and favorably known, has been re-edited and enlarged.<sup>(4)</sup> The plan of the book remains the same, but the subject is treated of more fully. Indeed in the desire to be explicit, much is suggested which is irrelevant. Elocution is too generally neglected. Boys "speak a piece," but of careful training of the voice, or instruction in gesture, there is little or none. We are glad therefore, to see this reprint of a book on this subject, since it seems to indicate an awakening interest in elocution.

The principles laid down are simple but comprehensive. "The first condition is to have developed a clear, round, smooth voice; the second, is a perfect control of the vocal organs, comprising a distinct articulation of all the elements of sound as expressed by the letters of our alphabet; third, perfect self-possession." The exercises have been selected from standard authors, and are well adapted for elocutionary exercise. In the hands of a competent elocutionist this will prove a valuable book, and we hope that its appearance will arouse new interest in this important study.

"MISS BEECHER'S HOUSEKEEPER AND HEALTHKEEPER," (Harper & Brothers,) is full of useful hints. She tells us how to cook, how to eat, what to wear, and how to put it on. Some of her suggestions for beautifying houses are particularly good. The book is, as the preface claims, "a complete encyclopædia of all that relates to a woman's duties as housekeeper, wife, mother, and nurse."

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(4) MANUAL OF ELOCUTION, embracing the Philosophy of Vocalization; with illustrations and exercises for drill in all the arts of reading and declamation. By Prof. C. P. Bronson, A.M., M.D. Edited by Laura M. Bronson. Louisville: John P. Morton and Company.

## MISCELLANEA.

WE are pained to announce the death, on May 4th, of WILLIAM H. MCGUFFEY, D.D., LL.D., at Charlottesville, Virginia. At the time of his death he was Professor of Moral Philosophy and Political Economy in the University of Virginia. Previously to this he held the positions of Professor of Ancient Languages at Miami University, and afterward of Moral Philosophy in the same institution. For three years he was President of Cincinnati College, and for six years held the same position in the Ohio University. He is extensively known as the author of a series of readers.

THE INFLUENCE OF THE SUN.—How complicated soever the motions of animals may be, whatever may be the changes which the molecules of our food undergo within our bodies, the whole energy of animal life consists in the falling of the atoms of carbon and hydrogen and nitrogen from the high level which they occupy in the food to the low level which they occupy when they quit the body. But what has enabled the carbon and the hydrogen to fall? What first raised them to the level which rendered the fall possible? We have already learned that it is the sun. It is at his cost that animal heat is produced and animal motion accomplished.—*Tyndall*.

SIR JOHN LUBBOCK has exhibited to the British Association a tame wasp which he had brought from the Pyrenees. It eats sugar from his hand, allows him to fondle it, and after taking short flights, always returns to the bottle which serves as its dwelling.—*Schulzeitung*.

WE are indebted to the Italians for the idea of newspapers. The title of their *gazettas* was, perhaps, derived from *gascera*, a magpie or chatterer; or, more probably, from a farthing coin peculiar to the city of Venice, called *gazetta*, which was the common price of the newspapers. Another etymologist is deriving it from the Latin *gaza*, which would colloquially lengthen it into *gazetta*, and signify a little treasury of news.